What is claimed is:

5

15

20

25

 A method of determining an optimum tracking offset value for an optical disk drive, comprising:

a step of determining a tracking offset

value set of a plurality of tracking offset values;

a step of recording a first test signal in a

first frame set of a plurality of frames using a write

power and said tracking offset value set, each frame being

recorded by a corresponding tracking offset value;

a step of reproducing said first test signal recorded in said first frame set;

a step of calculating first measured characteristic values corresponding to each tracking offset value included in said tracking offset value set;

a step of obtaining tracking offset characteristics by interpolating said first measured characteristic values; and

a step of determining an optimum tracking offset value that gives a maximum value in said tracking offset characteristics.

30

2. The method as claimed in claim 1, wherein said first frame set comprises a plurality of frame groups, each including a plurality of frames; said steps of recording said first test signal, reproducing said first test signal, and calculating first measured characteristic values are repeated for each of said frame groups;

said first measured characteristic values obtained for each of said frame groups are averaged for each tracking offset value; and

said tracking offset characteristics are obtained using the average measured characteristic values.

10

5

3. The method as claimed in claim 2, wherein said frames included in said frame groups

15 are located at different angular position in said optical disk; and

said frames corresponding to each tracking offset value in different frame groups are located at different angular position in said optical disk.

20

4. The method as claimed in claim 1, further

25 comprises:

a step of determining a target characteristic value suitable for said optical disk set in a rotative mode;

a step of selecting a first laser power set 30 of a plurality of laser powers;

a step of recording a second test signal in a second frame set of a plurality of frames using said first laser power set, each of said frames being recorded

5

10

15

20

25

30

by a corresponding laser power included in said first laser power set;

a step of reproducing said second test signal recorded in said second frame set;

a step of calculating second measured characteristic values corresponding to each laser power included in said first laser power set;

a step of determining said write power corresponding to said target characteristic value by interpolating said second measured characteristic values;

a step of determining a second laser power set of a plurality of laser powers;

a step of recording a third test signal in a third frame set of a plurality of frames using said optimum tracking offset value and said second laser power set, each of said frames being recorded by a corresponding laser power included in said second laser power set;

a step of reproducing said third test signal recorded in said third frame set;

a step of calculating third measured characteristic values corresponding to each laser power included in said second laser power set; and

a step of determining an optimum write power corresponding to said target characteristic value by interpolating said third measured characteristic values.

5. The method as claimed in claim 4, further comprising:

a step of storing said optimum tracking offset value in memory; and

a step of storing said optimum write power in said memory.

5

10

6. The method as claimed in claim 4, wherein said laser powers included in said first laser power set are laser powers having a level increasing in 5 equal steps from a minimum value to a maximum value; said tracking offset values included in said tracking offset value set are determined by an initial value and a step, both depending on said rotative mode of said optical disk; and

said laser powers included in said second laser power set are said write power and four laser powers, two increasing in an equal step from said write power and two decreasing in said equal step from said write power.

20

30

15

- 7. The method as claimed in claim 1, wherein said tracking offset characteristics are obtained by approximating with a quadratic curve.
 - 8. An optical disk drive, comprising:

 a motor that rotates an optical disk in a rotative mode;

an optical pickup that writes and reads a

test signal on said optical disk;

a controller that determines a tracking offset value set of a plurality of tracking offset values, records a first test signal in a first frame set of a plurality of frames using a write power and said tracking offset value set, each frame being recorded by a corresponding tracking offset value, reproduces said first test signal recorded in said first frame set, calculates first measured characteristic values corresponding to each tracking offset value included in said tracking offset value set, obtains tracking offset characteristics by interpolating said first measured characteristic values, and determines an optimum tracking offset characteristics.

15

25

30

10

9. The optical disk drive as claimed in 20 claim 8, wherein

said controller further determines a target characteristic value suitable for said optical disk set in a rotative mode, selects a first laser power set of a plurality of laser powers, records a second test signal in a second frame set of a plurality of frames using said first laser power set, each of said frames being recorded by a corresponding laser power included in said first laser power set, reproduces said second test signal recorded in said second frame set, calculates second measured characteristic values corresponding to each laser power included in said first laser power set, and determines said write power corresponding to said target characteristic value by interpolating said second measured

characteristic values, and

determines a second laser power set of a plurality of laser powers, records a third test signal in a third frame set of a plurality of frames using said optimum tracking offset value and said second laser power set, each of said frames being recorded by a corresponding laser power included in said second laser power set, reproduces said third test signal recorded in said third frame set, calculates third measured characteristic values corresponding to each laser power included in said second laser power set, and determines an optimum write power corresponding to said target characteristic value by interpolating said third measured characteristic values.

15

10